What Is Claimed Is:

1. A method for stimulating neural cell outgrowth or increased myelination, comprising:

contacting neuronal cells with a composition comprising prosaposin or a fragment thereof having the ability to promote increased neural outgrowth or increased myelination activity.

2. The method of Claim 1 wherein said prosaposin is native.

3. The method of Claim 1 wherein said prosaposin is recombinantly produced.

4. The method of Claim 1 wherein said fragment is saposin C.

5. The method of Claim 1 wherein said fragment is a peptide comprising amino acids 8-29 of saposin C.

6. The method of Claim 5 wherein said fragment consists essentially of the active neurotrophic fragment located within amino acids 8-29 of SEQ ID NO: 1.

7. The method of Claim 1 wherein said neuronal cells are neuroblastoma cells.

8. The method of Claim 7 wherein said neuroblastoma cells are selected from the group consisting of: NS20Y, Neuro 2A and N1E 115 cells.

9. The method of Claim 1 wherein said neuronal cells are contacted *in vitro*.

10. The method of Claim 1 wherein said neuronal cells are contacted *in vivo*.

11. The method of Claim 1 wherein said cells are from mouse cerebellar explants.

Subc2 12. A method for treatment of demyelination disorders in a mammal comprising:

identifying a mammal afflicted with said disorder; and administering to said mammal a pharmaceutically effective demyelination inhibiting amount of prosaposin or a neurotrophic fragment thereof.

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2 ~~13~~. The method of Claim 1 ~~12~~ wherein said fragment comprises saposin C.

14. The method of Claim 12 wherein said demyelination disorder is selected from the group consisting of: multiple sclerosis, acute disseminated leukoencephalitis, progressive multifocal leukoencephalitis and adrenal leukodystrophy.

4 ~~15~~. The method of Claim 1 ~~12~~ wherein said administration is selected from the group consisting of: intravenous, intramuscular, intradermal, subcutaneous, intracranial, intracerebrospinal and topical.

5 ~~16~~. The method of Claim 1 ~~12~~ wherein said prosaposin or fragment thereof is administered in a biologically compatible carrier.

6 ~~17~~. The method of Claim 1 ~~12~~ wherein said prosaposin or fragment thereof is enclosed in a lamellar structure.

~~18~~. A method for halting or slowing the progress of neural or myelin degeneration in neural tissue, comprising:

contacting neuronal tissue susceptible to such degradation with prosaposin or an active degradation-inhibiting fragment thereof.

8 ~~19~~. The method of Claim 7 ~~18~~ wherein said fragment is saposin C.

9 ~~20~~. The method of Claim 7 ~~18~~ wherein said tissue is *in vitro*.

10 ~~21~~. The method of Claim 7 ~~18~~ wherein said tissue is *in vivo*.

~~22~~. A method for the treatment of neuronal degenerative diseases of the central or peripheral nervous system, comprising administering to a mammal suffering from said disease an amount of a prosaposin fragment effective to retard or halt neuronal degeneration, wherein said fragment includes the neurotrophic activity of the peptide of SEQ ID NO:1.

23. The method of Claim 22 wherein said ~~administration~~ administering step is selected from the group consisting of: intravenous,

intramuscular, intradermal, subcutaneous, intracranial, intracerebrospinal, topical and oral.

24. The method of Claim 22 wherein said disease is a disease of the central nervous system and said fragment is selected to cross the blood brain barrier.

25. The method of Claim 24 wherein said disease is selected from the group consisting of: Alzheimer's disease, Parkinson's disease, stroke, post-polio syndrome and amyotrophic lateral sclerosis.

26. A method for retarding the progress of retinal neuropathy in a patient by administering to the patient an effective amount of prosaposin or a neurotrophic fragment thereof.

27. The method of Claim 26 wherein said retinal neuropathy is macular degeneration and said patient is a human over the age of 65.

28. The method of Claim 26 wherein said administration is selected from the group consisting of: topical, intravenous, intraocular and oral.

29. A pharmaceutical composition comprising prosaposin or a neurotrophic fragment thereof in unit dosage form.

30. A pharmaceutical composition comprising prosaposin or a neurotrophic fragment thereof formulated with a controlled release material.

31. A neural prosaposin receptor protein in isolated or purified form.

32. The receptor protein of Claim 31 wherein said receptor is isolated from a P100 plasma membrane fraction by affinity purification using a neurite growth-inducing peptide contained within the saposin C sequence linked to a solid support.

33. The receptor protein of Claim 31 wherein said receptor has a molecular weight of approximately 20 kDa.